Main Activity of Foreign Doctoral Recipients With Plans to Stay in the United States

From 1988–96, U.S. institutions awarded 55,000 S&E doctoral degrees to persons from the countries covered in this report. Of those students, 39 percent reported firm work or study offers in the United States at the time the SED was conducted (table A-2). Two types of offers were reported: (1) temporary (usually 1–2 years) postdoctoral appointments, and (2) offers of employment positions in industry and other sectors.

Postdoctoral Appointments in the United States

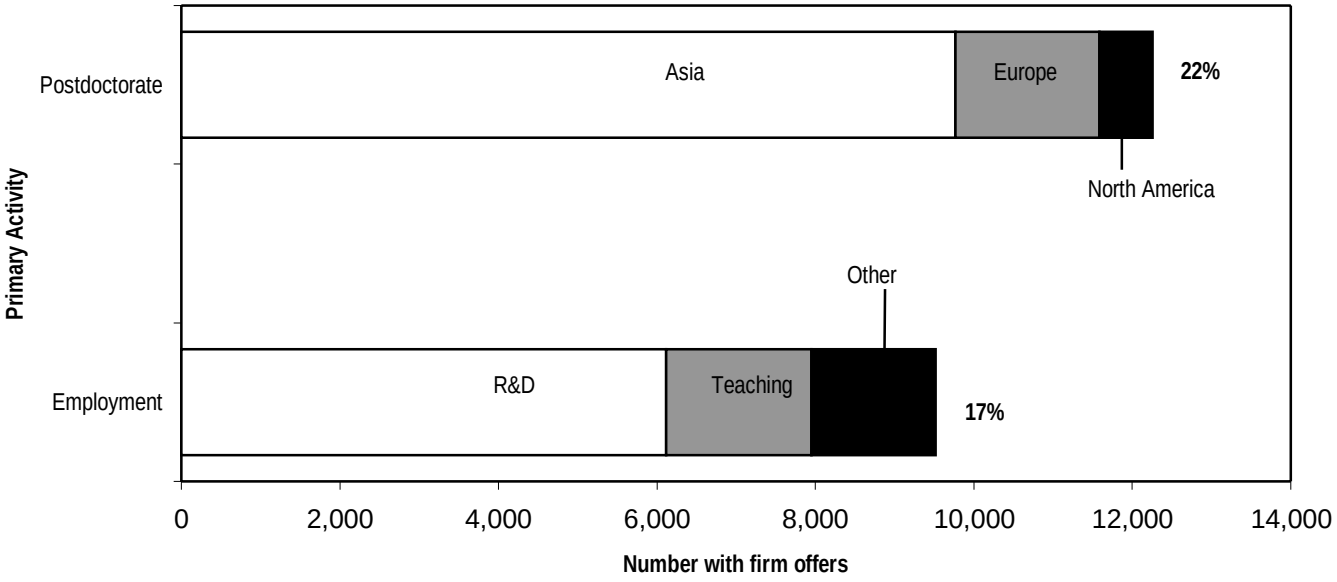
More than half of the students with firm offers reported they were planning to take postdoctoral appointments. This was 22 percent—or 12,000 students—of all 1988–96 foreign doctoral recipients in S&E fields (figure 5). Of these 12,000 students, almost 10,000 were from Asia, almost 2,000 were from Europe, and over 600 were from North America (figure 5 and table A-5).

Employment Positions in the United States

About 10,000 students reported receiving firm employment offers in the United States, representing 17 percent of all 1988–96 foreign S&E doctoral recipients (table A-5). Of this group, about 7,000 were from Asia, 1,700 were European, and 600 were from North America. Most of these job offers consisted of employment in research and development (figure 5). Only 3 percent of foreign S&E doctoral recipients receive a firm teaching offer directly after completing their degree. The percentage of teaching offers was somewhat higher (8 percent) for students from the United Kingdom (table A-5).

The primary postgraduation activity reported by foreign doctoral students with firm plans to remain in the United States also differed by country of origin. A large majority of Chinese students received offers of postdoctoral

Figure 5. Number and percent of foreign S&E doctoral recipients with firm offers and plans to stay in the United States, by primary activity: 1988-96



SOURCE: National Science Foundation, Division of Science Resources Studies, Survey of Earned Doctorates, special tabulations, and table A-5.

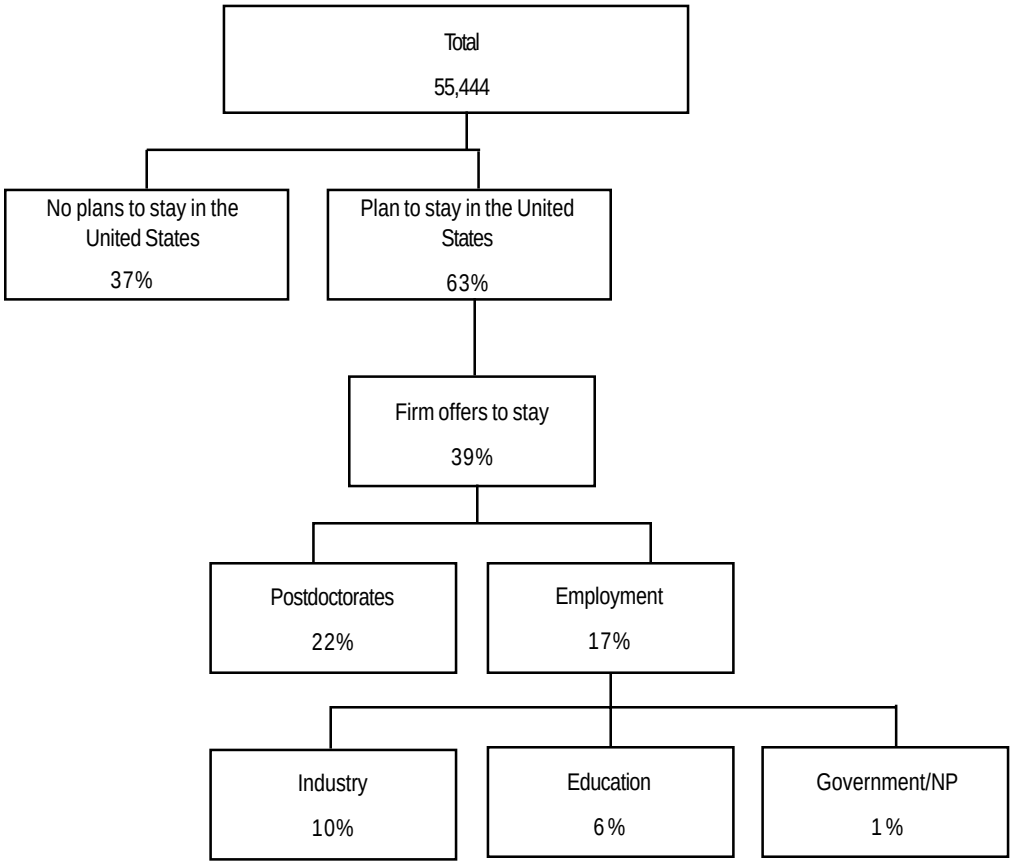
appointments, probably because the majority earn degrees in the natural sciences, fields in which postdoctoral experiences are common. During the period 1988–96, more than 5,000 Chinese doctoral recipients received postdoctoral appointments (table A-5). In contrast, Indian students were more likely to report permanent employment offers in the United States than postdoctoral appointments. Almost one-third of all S&E doctoral students from India reported receiving firm employment offers in the United States before completing their studies.

The relatively low stay rates of S&E doctoral recipients from Taiwan and South Korea might be explained in part by those countries' dynamic economies. From 1988–96, these countries were successful in attracting their students to return home. Only a small fraction of Korean doctoral recipients (6 percent) reported firm plans for U.S. employment. Most Koreans who planned to remain in the United States received offers of temporary postdoctoral appointments. Taiwanese and European students were evenly divided between accepting postdoctoral appointments and employment in the United States.

Type of Employer

Industry is the largest employer of foreign S&E doctoral recipients with firm job offers in the United States. Of the almost 10,000 foreign S&E doctoral recipients from 1988–96 who reported firm offers to work in the United States (representing 17 percent of total S&E foreign doctoral recipients), more than half (10 percent of the total) received offers from industry (figure 6). Again, there are differences by country and field. For example, 20 percent of doctoral recipients from India reported receiving firm offers of employment from U.S.

Figure 6. Number and percent of foreign S&E doctoral recipients with plan to stay in the United States: 1988–96



SOURCE: National Science Foundation, Division of Science Resources Studies, *Survey of Earned Doctorates*.

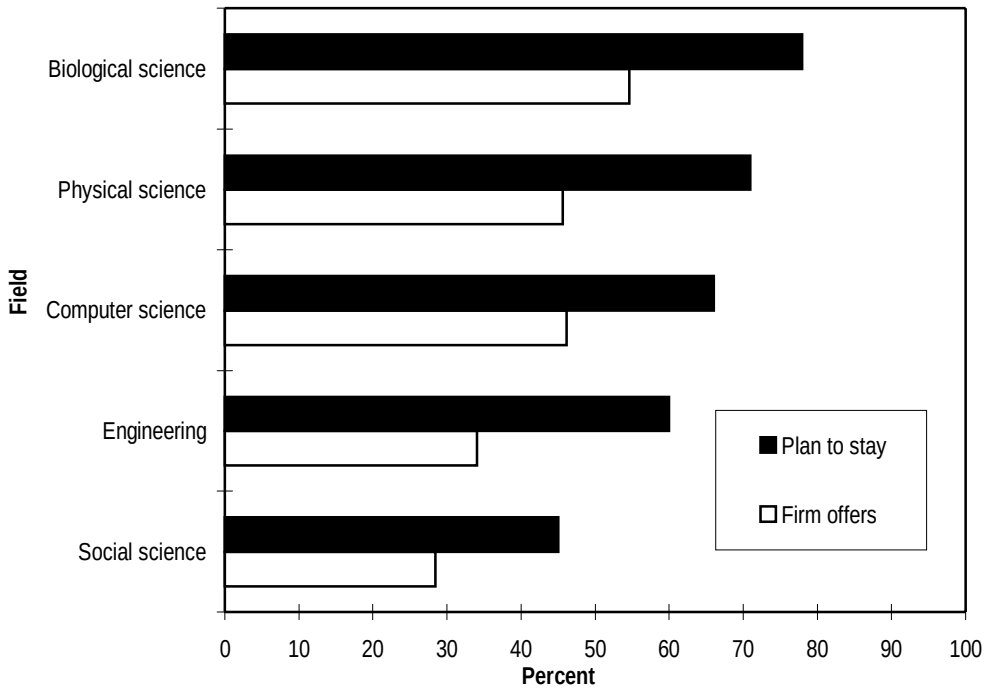
industrial firms, nearly—or more than—double the percentages for the other countries covered in this report (table A-6). Although Korea and Taiwan send more students than India to the United States for graduate study in S&E, the percentages of their students receiving firm job offers from U.S. industry are much lower—2.3 percent and 9.8 percent, respectively—than India's.

About 6 percent of the 1988–96 foreign S&E doctoral recipients received academic research or teaching offers from U.S. educational institutions (table A-6). Again, there are differences by country. China and India had the highest absolute numbers of students with these offers (874 and 744, respectively), but the United Kingdom had by far the highest percentage of students with these offers (15.7 percent).

Field of Science

The stay rates of foreign doctoral recipients also vary by S&E field. Foreign students earning doctoral degrees in the biological sciences are the most likely to have plans to remain in the United States and to receive firm offers of postdoctoral study to do so. Of the approximately 9,000 foreign students earning doctoral degrees in the biological sciences from 1988–96, 77 percent planned to remain in the United States and 55 percent reported having firm offers (figure 7). Other fields showing relatively high stay rates are the physical sciences and computer sciences. A smaller proportion of foreign doctoral recipients in fields of engineering and the social sciences plans to remain in the United States; this was especially true for Taiwanese and Korean students majoring in engineering.

Figure 7. Percent of foreign doctoral recipients with plans to stay in the United States, by field: 1988–96

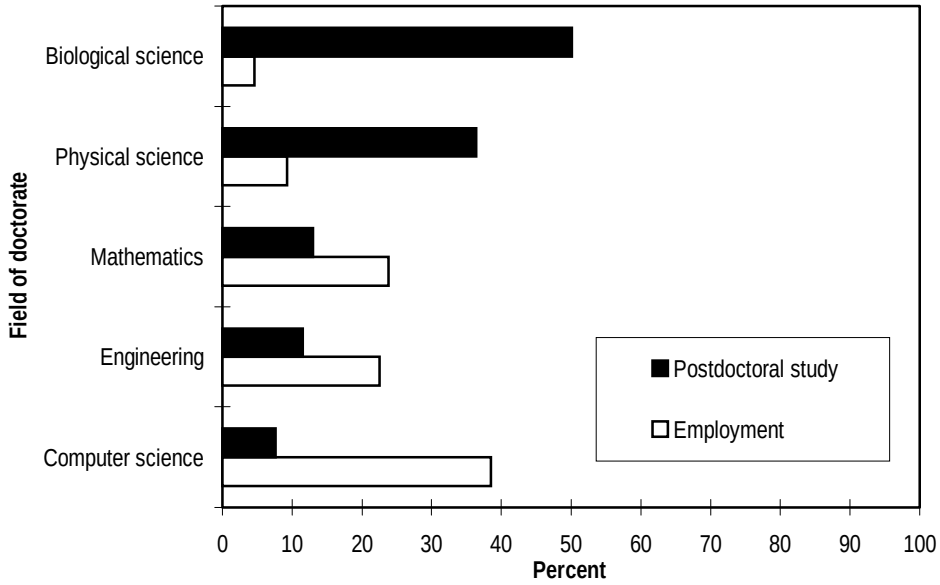


SOURCE: National Science Foundation, Division of Science Resources Studies, *Survey of Earned Doctorates*, special tabulations, and table A-7.

The decision to accept postdoctoral study is, not surprisingly, greatest in fields in which such further study is a common career path. More than half of all foreign students earning doctoral degrees in the biological sciences plan to remain in the United States for postdoctoral study, whereas only 5 percent report firm job offers (figure 8). In contrast, only 7 percent of computer science majors plan to remain for postdoctoral study, whereas more than 38 percent had employment offers. Those earning Ph.D.s in mathematics also seemed to be in high demand in the United States; most of their employment offers came from universities.

As stated earlier, the majority of U.S. employment offers received by foreign S&E doctoral recipients were from industry; a smaller proportion receives offers from educational institutions. Industry provided the highest numbers of job offers to foreign graduate students majoring in engineering (3,256), physical sciences (713), and computer sciences (591). The highest number of job offers made by educational institutions went to students majoring in psychology and social sciences (1,213), engineering (815), and mathematics (620) (table A-9).

Figure 8. Percent of foreign doctoral recipients with firm plans to remain in the United States, by field and main activity: 1988-96



SOURCE: National Science Foundation, Division of Science Resources Studies, *Survey of Earned Doctorates*, special tabulations, and table A-8.